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EXAMINER	
NGUYEN, CHAU M	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/955,520	PAVELCHEK, ANDREW	
	Examiner	Art Unit	
	Chau M Nguyen	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-4 and 9-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *16-18* is/are allowed.

6)☒ Claim(s) *2-4 and 9-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *03/15/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the paper filed on 16 August, 2000.

Applicant's election without traverse of Group III, which includes claims 2-4 and 9-17, is acknowledged.

Priority

2. Acknowledgment is made of Applicant's claim for priority based upon:

a. U.S. Provisional Application No. 60/241,315 filed on 16, October 2000.

b. U.S. Provisional Application No. 60/241,419 filed on 17, October 2000.

Objections

3. As appeared, "node head 208", (page 8, lines 10-11, paragraph [0041]), is not correct. Appropriate correction is required.

4. As claim 13, (line 2), "map nod" should be changed to "map node". Correction is required.

5. As claim 15, it seems that:

"... said second set signal is received by said stare node..." (line 4)

should be read as ".... scan node...".

Drawings

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims.

Therefore, the " ...a controller coupled to said first and second node heads .... establishing a first and second optical communication links." (claim 9, lines 9-14),

must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office Action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claim 2 is rejected under 35 U.S.C. 102(e) as being anticipated by Bloom (U.S. Pat. No. 6,323,980 B1).

The applied reference has a common Assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As claim 2, Bloom discloses a system for establishing and maintaining optical links between optical transceiver nodes in a free space optical communication network, the system (related to fig. 5) comprising:

a first fixed position base station (node) (one of the four elements (2)) at a first location (such as element 1);

a second fixed position base station (node) (another element 2) a second location including a receiver (see fig. 5) (col. 7, line 18-22);

a pointing mechanism (11) (detailed in figs. 2 and 3) mounted on said first fixed position node comprising a transmitter (10, fig. 2) configured to transmit an optical signal, said pointing mechanism configured to automatically adjust both the azimuth and

elevation angles of said transmitter (col. 3, lines 47-50) so that said transmitter is pointed directly at said receiver and said optical signal is transmitted in a direct path from said transmitter to said receiver (col. 2, lines 17-21); and

a second receiver (beacon receiver (80), fig. 2) mounted on said first fixed position node and configured to receive an adjustment signal (such beacon signal) (col. 12, lines 48-51), said pointing mechanism further configured to automatically adjust said azimuth and elevation angles of said transmitter according to said adjustment signal received by said second receiver (col. 3, lines 52-55).

9. Claims 2-4 and 9-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Chan et al. (Hereinafter "CHAN") (U.S. Pat. No. 6,504,634 B1).

The applied reference has a common Assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As claim 2, CHAN discloses system for establishing and maintaining optical links between optical transceiver nodes in a free space optical communication network, the system comprising:

a first fixed position node (i.e. 104, fig. 1) at a first location (col. 5, lines 35-45);

a second fixed position node (another 104) at a second location including a receiver (col. 5, line 65 - col. 6, line 6);

a pointing mechanism (680, 682 and 684, fig. 9) mounted on said first fixed position node comprising a transmitter configured to transmit an optical signal, said pointing mechanism configured to automatically adjust both the azimuth and elevation angles of said transmitter so that said transmitter is pointed directly at said receiver and said optical signal is transmitted in a direct path from said transmitter to said receiver (col. 10, lines 30-37); and

a second receiver (such 1010, detailed in fig. 18) mounted on said first fixed position node and configured to receive an adjustment signal, said pointing mechanism further configured to automatically adjust said azimuth and elevation angles of said transmitter according to said adjustment signal received by said second receiver (col. 28, lines 23-32).

As claim 3, CHAN discloses a retro reflector to reflect said optical signal to said second receiver (col. 36, lines 46-51).

As claim 4, CHAN discloses an input/output interface (820, fig. 13) coupled to a node (col. 19, lines 37-41) and configured to receive adjustment signal including information regarding the geographic coordinates of said receiver (col. 3, lines 8-15).

As claims 9, 10 and 11, CHAN discloses a node for use in a free space optical communication network, the node comprising:

a first, second, third and fourth node head(s) (654) (see fig. 8), each having an optical transmitter and an optical receiver (col. 9, lines 15-17);

(each) head node having a pointing mechanism configured to adjust azimuth angle and elevation angle of said (each) node head (col. 9, lines 42-47);

a controller (912) (detailed in fig. 15) coupled to each node head(s) and having an acquisition module configured to command said each pointing mechanism(s) to automatically adjust said (each) azimuth angle(s) and said (each) elevation angle(s) until response signal from (each) remote node(s) is/are received by said (each) head(s), respectively, establishing (each) optical communication link (col. 21, line 61 – col. 22, lines 14).

10. Claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Wissinger (U.S. Pat. No. 5,475,520).

As claim 2, Wissinger discloses a system for establishing and maintaining optical links between optical transceiver nodes in a free space optical communication network, the system (fig. 1) comprising:

a first fixed position node (11) at a first location (col. 3, lines 3-5);

a second fixed position node (13) at a second location including a receiver (30) (col. 3, lines 7-9);

a pointing mechanism (46) mounted on said first fixed position node comprising a transmitter configured to transmit an optical signal, said pointing mechanism configured to automatically adjust both the azimuth and elevation angles of said transmitter so that

said transmitter is pointed directly at said receiver and said optical signal is transmitted in a direct path from said transmitter to said receiver (col. 3, lines 55-60); and

a second receiver (42, col. 3, 37-41) mounted on said first fixed position node and configured to receive an adjustment signal, said pointing mechanism further configured to automatically adjust said azimuth and elevation angles of said transmitter according to said adjustment signal received by said second receiver (col. 3, lines 41-45).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wissinger (U.S. Pat. No. 5,475,520) as applied to claim 2 above, and further in view of Javitt et al. (Hereinafter "Javitt") (U.S. Pat. No. 6,381,055 B1).

As claim 3, Wissinger does not clearly show a retro reflector mountable on said second fixed position node configured to receive said optical signal transmitted from said transmitter and reflect said optical signal to said second receiver. However, Javitt discloses a retro-reflector (321, fig. 5A) mountable on second node (such 320) configured to receive said optical signal transmitted from transmitter (such 315) and reflect said optical signal to said second receiver (on first node) (Javitt, col. 9. lines 39-41 and lines

53-57). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to use a retro-reflector for reflecting an optical signal as taught by Javitt into the system of Wissinger in order to provide the alignment process between nodes with simple and rapid orientation (Javitt, col. 9, lines 51-52).

As claim 4, Javitt discloses a microprocessor, which is inherently consisting of an input/output interface, coupled to said (each) node and configured to receive adjustment signal including information regarding the geographic coordinates of receiver (col. 9, lines 23-30).

13. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being obvious over Javitt et al. (Hereinafter "Javitt") (U.S. Pat. No. 6,381,055 B1).

As claim 12, Javitt discloses a method for establishing optical links between optical transceiver nodes (related to figs. 5A & 5B, col. 8, lines 63-64) in a free space optical communication network including a (map) node (i.e. 310 or 410, figs. 5A/5B) (col. 9, lines 40-41) having a pivotably mounted transmitter and receiver (i.e. 411, 412, 421, 422, respectively, fig. 5B), and a (reflected) node (i.e. 320 or 420, figs. 5A/5B) having a mountable retro-reflector (i.e. 321, fig. 5A, col. 9, lines 41-43), the method comprising:

transmitting a signal from said transmitter of said map node towards said retro-reflector (col. 9 , lines 41-43) while said transmitter scans (moves) through a defined uncertainty range by iteratively adjusting an azimuth angle and an elevation angle of said transmitter (col. 9, lines 46-50);

receiving at said receiver (i.e. 315, fig. 5A) of said map node (310) a reflected optical signals with a signal strength (col. 4, lines 46-47);

determining a maximum signal strength from said signal strength;

defining an optimal azimuth angle and an optimal elevation angle as said azimuth angle and said elevation angle of said transmitter associated with said maximum signal strength (col. 4, lines 35-38);

offsetting said optimal azimuth angle and said optimal elevation angle to compensate for the defined distance between said retro reflector and a receiver mounted on said reflect node (col. 9, lines 58-63); and

adjusting said transmitter to said offset optimal azimuth angle and said offset optimal elevation angle so that said transmitter is aligned directly with said receiver mounted on said reflect node (col. 10, lines 6-8).

Javitt does not clearly discloses (transmitting) a plurality of optical signals from said transmitter as cited in the claimed invention. However, Javitt shows the orientation may using scanning beam (such 312, col. 10, lines 15-16) to perform alignment between the nodes, and the scanning may including continuous or periodic rotary movements (col. 10, lines 50-51). Therefore, it would have been obvious to one having ordinary skill in the art that the time of the invention was made to recognized that at each position (associated with periodic rotary movements) a signal will be transmitted (from said map node) towards said reflected node, such a plurality of optical signals will be transmitted during scanning process.

As claim 13, Javitt discloses the alignment process to be performed at both first and second nodes by commanding for adjusting angles associated with said maximum signal strength (col. 16, lines 58-65).

14. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being obvious over Cheng et al. (Hereinafter "Cheng") (U.S. Pat. No. 6,577,421 B1).

As claim 14, Cheng discloses a method for automatically establishing an optical link between a scan node and a stare node (i.e. between terminals 12 and 18, see fig. 1, col. 3, lines 36-46) pointed generally towards one another in a free space optical communication network, the method comprising:

transmitting from a rotatably mounted transmitter in said scan node a plurality of signals each including a current azimuth pointing angle of said transmitter (col. 2, lines 43-48), said plurality of signals are transmitted while said transmitter iteratively rotates within a defined uncertainty region (col. 12, lines 44-51) such that each of said plurality of signals is transmitted at a different azimuth angle;

receiving at said stare node at least some of said plurality of signals from said transmitter (col. 2, lines 31-34);

determining a plurality of signal strengths associated with said at least some of said plurality of signals received at said stare node (col. 12, lines 28-32);

storing said azimuth pointing angle of said transmitter and an associated signal strength in a network management application (NMA) when each of said at least some of

said plurality of signals is received by said stare node, wherein a plurality of azimuth pointing angles and signal strengths are stored in said NMA (col. 12, lines 32-39);

selecting a maximum signal strength from said plurality of signal strengths stored in said NMA;

defining an optimal azimuth pointing angle as said azimuth pointing angle associated with said maximum signal strength; and

moving said transmitter in said scan node to said optimal azimuth pointing angle (col. 10, lines 10-17).

Cheng does not clearly say a plurality of signals (that to be transmitted from a transmitter). However, the terms "plurality of signals" is inherently including in the alignment process of Cheng. As shown, the transmitter, at each predetermined offset position, a respective optical signal is transmitted, and wherein, each signal with a respective intensity will be received at the second terminal (col. 2, lines 48-54). Therefore, it would have been obvious to one having ordinary skill in the art to recognize that there is a plurality of signals to be transmitted from one terminal to another.

As claim 15, (as the best understood), Cheng further discloses:

transmitting from said first node (scan node) a set signal (col. 2, lines 27-31);

transmitting from said second node (stare node) a second set signal, wherein when said set signal is received by said second node and said second set signal is received by said first node, a communication link is established (col. 2, lines 31-34).

Allowable Subject Matter

15. Claims 16, 17 and 18 allowed.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bloom et al. (U.S. Pat. No. 5,710,652) is cited to show laser communication transceiver and system.

Willebrand (U.S. Pat. No. 6,239,888 B1) is cited to show terrestrial optical communication network of integrated fiber and free-space links.

Yao (U.S. Pat. No.) is cited to show

Grubb (U.S. Pat. No.) is cited to show

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chau M. Nguyen whose telephone number is 571-272-3030. The examiner can normally be reached on Mon-Fri from 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.M.N.
Nov. 12, 2004

M. R. Sedighian

M. R. SEDIGHIAN
PRIMARY EXAMINER